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Securing the Future

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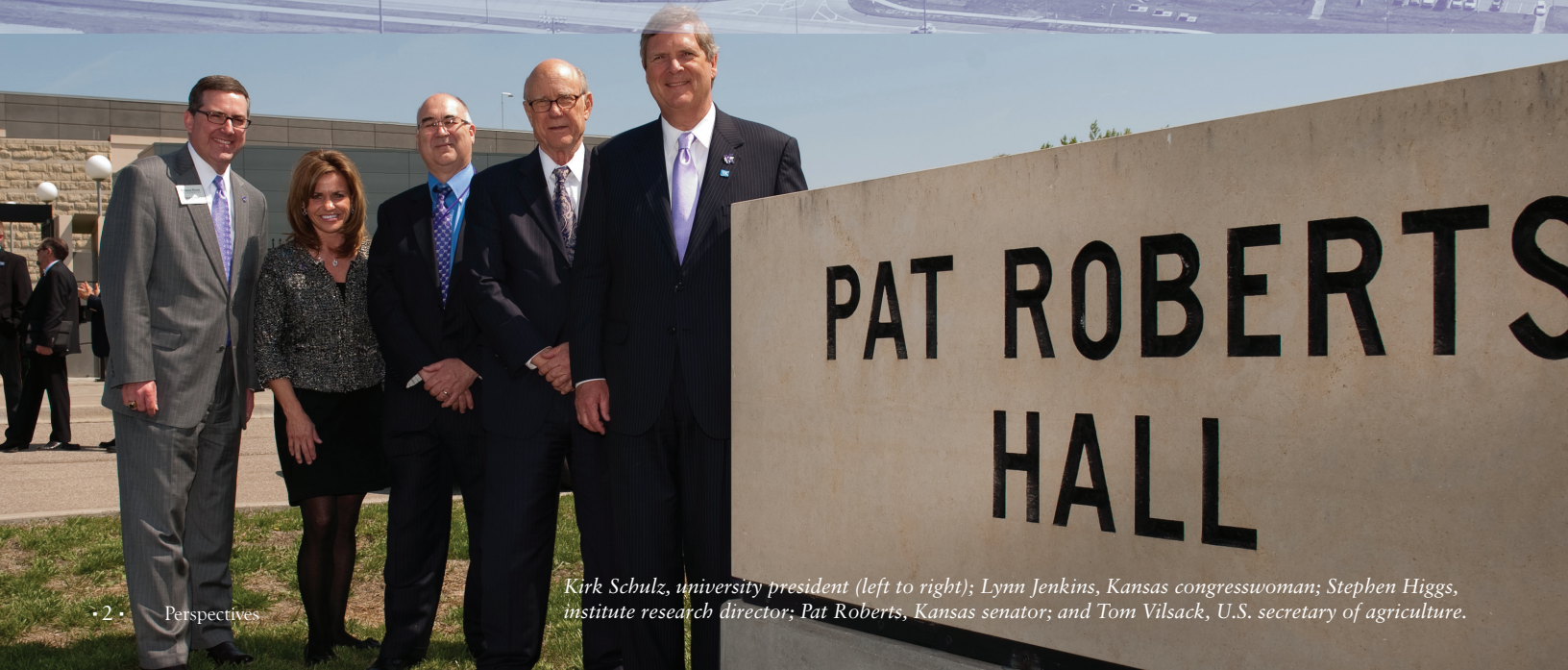

Kirk Schulz, university president (left to right); Lynn Jenkins, Kansas congresswoman; Stephen Higgs, institute research director; Pat Roberts, Kansas senator; and Tom Vilsack, U.S. secretary of agriculture.

Infectious plant and animal diseases may be one of the biggest challenges for America. However, Kansas State University's Biosecurity Research Institute is a front-line offense in this microscopic battle.

"I believe the Biosecurity Research Institute is making America safer," said Stephen Higgs, the institute's research director, associate vice president for research and Peine biosecurity chair at Kansas State University. "We are conducting work critical to food safety and crop safety, and using education to develop the new generation of experts in these fields. We are preparing the United States to respond more effectively to these emerging diseases."

As well as its integral role in disease research, the facility is helping to kick-start the federal government's premier biosafety level-4 research facility, the National Bio and Agro-Defense Facility, or NBAF.

Changing of the guard

The U.S. Department of Homeland Security plans to phase out the aging Plum Island Animal Disease Center — a major animal disease research facility in New York — and replace it with NBAF in Manhattan, Kan. NBAF is under construction on the Kansas State University campus and adjacent to the Biosecurity Research Institute, creating a collaborative environment.

During the NBAF's construction, research on some of the diseases currently studied at Plum Island will transition to the institute. University and federal scientists will develop complementary projects and use them to launch research at NBAF once it opens.

"Essentially the institute is going to be a springboard to get NBAF research going as soon as possible," Higgs said. "As Plum Island ramps down, we are making sure that there is no drop-off in research and training on these pathogens."

Higgs said this is important because the nation cannot afford to have a period when work is not being done on these diseases.

Scientists at both institutions are working closely, and Biosecurity Research Institute scientists will begin projects related to pathogens studied at Plum Island, including classical swine fever and African swine fever. Scientists from the U.S. Department of Agriculture's Arthropod-Borne Animal Diseases Research Unit have begun collaborative research with the Center of Excellence for Emerging and Zoonotic Animal Diseases on a vaccine strain of Rift Valley fever at the institute — a disease that extends beyond Plum Island's capabilities.

Several Kansas State University scientists have also visited the Plum Island Center — including Higgs. At Plum Island, Higgs discussed the research transition and transboundary animal diseases, which occur in multiple countries and are capable of being carried to new countries.

"Starting these projects at the institute really opens up new possibilities for infectious disease research at the university that hasn't been possible in the past," Higgs said. "These are high-priority pathogens of major concern because they are a threat to our agricultural system and health. I really see this as being a whole new era at Kansas State University."

Continuing the critical work

The beginning of NBAF does not mean an end to research at the university's Biosecurity Research Institute. The scientists will still study crop- and food-based threats — fields NBAF will not study, and of course will continue with research on diseases of animals — advancing multidisciplinary research at the university, Higgs said.

Additionally, Higgs anticipates contractual research with corporations and industries, which will accelerate commercial breakthroughs in disease resistance and food safety.

"Right now we are continuing to increase our expertise and build upon our reputation so that when the doors open at NBAF and the requests come in asking if we can help with an important research project, we can say, 'Yes, we can do it,'" Higgs said.

By Greg Tammen, Communications and Marketing

Securing the future